

REMARKS

[0003] Applicant respectfully requests reconsideration and allowance of all of the claims of the application. Claims 1-31 are presently pending. Claims 3-7, 10, 12, 20, 23, and 28-31 are amended herein; no claims are withdrawn or cancelled herein; and no new claims are added herein.

Formal Request for an Interview

[0004] If the Examiner's reply to this communication is anything other than allowance of all pending claims, then I formally request an interview with the Examiner. I encourage the Examiner to call me—the undersigned representative for the Applicant—so that we can talk about this matter so as to resolve any outstanding issues quickly and efficiently over the phone.

[0005] Please contact me or my assistant to schedule a date and time for a telephone interview that is most convenient for both of us. While email works great for us, I welcome your call to either of us as well. Our contact information may be found on the last page of this response.

Claim Amendments and Additions

[0006] Without conceding the propriety of the rejections herein and in the interest of expediting prosecution, Applicant amends claims 3-7, 10, 12, 20, 23, and 28-31 herein.

Formal Matters

[0007] This section addresses any formal matters (e.g., objections) raised by the Examiner.

Specification

[0008] The Examiner objects to paragraphs [0033] and [0067] of the specification for typographical errors. Herein, Applicant amends these paragraphs, as shown above, to correct the informalities noted by the Examiner.

Drawings

[0009] The Examiner objects to Figure 4 for including reference number 406, which is not mentioned in the specification. Herein, Applicant amends paragraph [0049] of the specification to include mention of reference number 406.

Claims

[0010] The Examiner objects to claims 7, 10, 23, and 31 for various informalities. Herein, Applicant amends these claims, as shown above, to correct the informalities noted by the Examiner.

Substantive Matters

Claim Rejections under § 101

[0011] Claims 12, 20-22, and 29-31 are rejected under 35 U.S.C. § 101. In light of the amendments presented herein, Applicant respectfully submits that these claims comply with the patentability requirements of § 101 and that the § 101 rejections should be withdrawn. The Applicant further asserts that these claims are allowable. Accordingly, Applicant asks the Examiner to withdraw these rejections.

[0012] If the Examiner maintains the rejection of these claims, then the Applicant requests additional guidance as to what is necessary to overcome the rejection.

Claim Rejections under §§ 102 and/or 103

[0013] The Examiner rejects claims 1-6, 8, 12, and 23-29 under §102. For the reasons set forth below, the Examiner has not shown that cited references anticipate the rejected claims.

[0014] In addition, the Examiner rejects claims 7, 9, 10, 11, 13-22, 30, and 31 under §103. For the reasons set forth below, the Examiner has not made a prima facie case showing that the rejected claims are obvious.

[0015] Accordingly, Applicant respectfully requests that the §102 and/or §103 rejections be withdrawn and the case be passed along to issuance.

[0016] The Examiner's rejections are based upon the following references alone and/or in combination:

- **Hotti:** *Hotti et al.*, US Patent No. 6,970,876 (issued November 29, 2005; Filed May 8, 2001);
- **Oracle1999:** Oracle8/ Distributed Database Systems Release 8.1.5, 1999;
- **Carey:** *Carey et al.*, US Patent No. 6,947,945 (issued September 20, 2005; Filed March 21, 2000);
- **Baisley:** *Baisley et al.*, US Patent No. 6,415,299 (issued July 2, 2002; Filed April 12, 2000).

Overview of the Application

[0017] The Application describes a technology for managing multiple versions of a relational database schema. Schema data associated with multiple versions of a relational database are maintained according to a database schema version management structure. The schema data identifies, for a particular version, data definition language (DDL) scripts, data manipulation scripts (DML), and drop scripts that are to be applied to upgrade from the previous version of the database to the particular version of the database.

[0018] Laws of set theory are applied to the database schema data to identify which DDL scripts and DML scripts are to be executed in order to create a full install of a particular version of the database. Similarly, laws of set theory are applied to the database schema data to identify which DDL scripts, DML

scripts, and drop scripts are to be executed in order to upgrade from a given version of the database to a particular newer version of the database.

[0019] The identified scripts are copied into an installation file (or upgrade file), which can then be executed to perform the appropriate install (or upgrade).

Cited References

[0020] The Examiner cites Hotti as the primary references in the anticipation- and obviousness-based rejections. The Examiner cites Oracle1999, Carey, and Baisley as secondary references in the obviousness-based rejections.

Hotti

[0021] Hotti describes a technology for managing distributed databases, database schemas, and configuration of software that uses those schemas.

Oracle1999

[0022] The cited portion of Oracle1999 illustrates an example command that can be used to create a local procedure that deletes a row from a remote table and grants an execute privilege.

Carey

[0023] Carey describes a technology for publishing relational data as XML by translating XML queries into queries against a relational database without requiring conversion of the relational database into an XML database.

Baisley

[0024] Baisley describes a technology for merging versions of a model in an object oriented repository.

Anticipation Rejections

[0025] Applicant submits that the anticipation rejections are not valid because, for each rejected claim, no single reference discloses each and every element of that rejected claim.¹ Furthermore, the elements disclosed in the single reference are not arranged in the manner recited by each rejected claim.²

¹ "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987); also see MPEP §2131.

² See *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990).

Based upon Smith

[0026] The Examiner rejects claims 1-6, 8, 12, and 23-29 under 35 U.S.C. §102(e) as being anticipated by Hotti. Applicant respectfully traverses the rejections of these claims. Based on the reasons given below, Applicant asks the Examiner to withdraw the rejection of these claims.

Independent Claim 1

[0027] Applicant submits that Hotti does not anticipate this claim because it does not show or disclose the following elements as recited in this claim:

- automatically determining a first set of data definition language (DDL) scripts associated with the particular version of the relational database;
- automatically determining a second set of data manipulation language scripts associated with the particular version of the relational database;
- and
- generating an installation file comprising a union of the first set and the second set.

[0028] With reference to each of the first two elements of claim 1, the Examiner cites Hotti column 2, lines 9-10 and column 4, lines 49-58.

[0029] Column 2, lines 9-10 gives a definition of "schema script", indicating that it is a script that creates a schema or creates a new revision of an existing schema of a database node.

[0030] Column 4, lines 49-58 states that it is possible to update schemas of a database system as well as other information of a node, such as configuration scripts, configuration programs, and application binaries. This portion of the cited reference also indicates that schema scripts can also include data manipulation language (DML) or data definition language (DDL) scripts.

[0031] While the cited portions of the reference may describe updating database schemas, the reference does not disclose automatically determining sets of scripts. Specifically, Applicant fails to see how the cited portions of Hotti disclose, "automatically determining a first set of data definition language (DDL) scripts associated with the particular version of the relational database;" and "automatically determining a second set of data manipulation language scripts associated with the particular version of the relational database," as recited in claim 1.

[0032] With reference to, "generating an installation file comprising a union of the first set and the second set," the Examiner cites Hotti column 3, lines 21-25 and column 7, lines 1-4.

[0033] Column 3, lines 21-25 states, "These synchronized schema/application configuration management replicas comprise scripts that are used for creating and/or updating the schemas of the database nodes and managing the configurations of applications that use the database node."

[0034] Column 7, lines 1-4 states, "This downloads the schema creation scripts and possibly also application configuration data such as software binaries and installation programs of the application master to the database server."

[0035] While both of these portions of the cited reference mention scripts that are used for creating and/or updating a schema, none of the cited portions of the reference disclose, "generating an installation file comprising a union of" an automatically determined first set of data definition language scripts and an automatically determined second set of data manipulation language scripts, as recited in claim 1. In fact, Applicant fails to see any portion of the reference that discloses generating an installation file or that discloses a union of two sets of scripts.

[0036] Accordingly, for at least these reasons, claim 1 is allowable over Hotti, and Applicant respectfully requests that the 102 rejection of claim 1 be withdrawn.

Dependent Claims 2-6, 8, and 12

[0037] These claims ultimately depend upon independent claim 1. As discussed above, claim 1 is allowable. It is axiomatic that any dependent claim which depends from an allowable base claim is also allowable. Additionally, some or all of these claims may also be allowable for additional independent reasons. For example:

[0038] Claim 3 recites, "The method as recited in claim 1 wherein the automatically determining a first set comprises extracting a filename from metadata associated with the first version, the filename associated with a file comprising a data definition language script."

[0039] Claim 4 recites, "The method as recited in claim 1 wherein the automatically determining a second set comprises extracting a filename from metadata associated with the first version, the filename associated with a file comprising a data manipulation language script."

[0040] With reference to claims 3 and 4, the Examiner cites Hotti, column 6 lines 63-66, which states, "As part of the registrations, the identification data, e.g. schema name, of the new application database node is sent to the configuration management master database node." This cited portion of the reference indicates that a schema name may be sent to a master database node. However, there is nothing to indicate that the schema name is a filename, as recited in the claims. Furthermore, the cited portion of the reference does not disclose extracting anything (a filename in particular) from metadata.

[0041] Accordingly, for at least these reasons, claims 3 and 4 are allowable over Hotti.

[0042] Claim 5 recites, "The method as recited in claim 1 wherein the generating an installation file comprises copying a data definition language script from a script file associated with the first set into the installation file."

[0043] Claim 6 recites, "The method as recited in claim 1 wherein the generating an installation file comprises copying a data manipulation language script from a script file associated with the second set into the installation file."

[0044] With reference to claims 5 and 6, the Examiner cites Hotti, column 7, lines 4-6, which states, "Next the schema of the application master database node is created using the scripts that were downloaded to the new replica database node, 310." The cited portion of the reference describes creating a replica database structure based on downloaded scripts. However, the reference does not disclose, "copying a ... script from a script file associated with the ... set into the installation file," as recited in claims 5 and 6. Applicant sees nothing in the cited reference that discloses the copying as recited in these claims.

[0045] Accordingly, for at least these reasons, claims 5 and 6 are allowable over Hotti.

Independent Claim 23

[0046] As amended, claim 23 recites, "generate an installation file associated with any one of the multiple versions of the relational database." As stated above with reference to independent claim 1, Hotti does not disclose this element. Accordingly, claim 23 is allowable over Hotti, and Applicant respectfully requests that the 102 rejection of claim 23 be withdrawn.

Dependent Claims 24-28

[0047] These claims ultimately depend upon independent claim 23. As discussed above, claim 23 is allowable. It is axiomatic that any dependent claim which depends from an allowable base claim is also allowable. Additionally, some or all of these claims may also be allowable for additional independent reasons.

Independent Claim 29

[0048] Claim 29 recites, "generate an installation file associated with an initial version of the relational database by applying laws of set theory to the schema data to identify scripts associated with the database objects of the initial version of the relational database." As stated above with reference to independent claim 1, Hotti does not disclose generating an installation file. Accordingly, claim 29 is allowable over Hotti, and Applicant respectfully requests that the 102 rejection of claim 29 be withdrawn.

Obviousness Rejections

Lack of *Prima Facie* Case of Obviousness (MPEP § 2142)

[0049] Applicant disagrees with the Examiner's obviousness rejections. Arguments presented herein point to various aspects of the record to demonstrate that all of the criteria set forth for making a prima facie case have not been met.

Based upon Hotti and Oracle1999

[0050] The Examiner rejects claim 7 under 35 U.S.C. § 103(a) as being unpatentable over Hotti in view of Oracle1999. Applicant respectfully traverses the rejection of this claim and asks the Examiner to withdraw the rejection of this claim.

[0051] Claim 7 ultimately depends upon independent claim 1. As discussed above, claim 1 is allowable. It is axiomatic that any dependent claim which depends from an allowable base claim is also allowable. Additionally, claim 7 may also be allowable for additional independent reasons.

Based upon Hotti and Carey

[0052] The Examiner rejects claim 9 under 35 U.S.C. § 103(a) as being unpatentable over Hotti in view of Carey. Applicant respectfully traverses the rejection of this claim and asks the Examiner to withdraw the rejection of this claim.

[0053] Claim 9 ultimately depends upon independent claim 1. As discussed above, claim 1 is allowable. It is axiomatic that any dependent claim which depends from an allowable base claim is also allowable. Additionally, claim 9 may also be allowable for additional independent reasons.

Based upon Hotti and Baisley

[0054] The Examiner rejects claims 10, 11, 13-20, 30, and 31 under 35 U.S.C. § 103(a) as being unpatentable over Hotti in view of Baisley. Applicant respectfully traverses the rejection of these claims and asks the Examiner to withdraw the rejection of these claims.

Dependent Claims 10 and 11

[0055] Claims 10 and 11 ultimately depend upon independent claim 1. As discussed above, claim 1 is allowable. It is axiomatic that any dependent claim which depends from an allowable base claim is also allowable. Additionally, claims 10 and/or 11 may also be allowable for additional independent reasons.

Independent Claim 13

[0056] Claim 13 recites:

A method for generating an upgrade file to upgrade version i of a relational database to version j of the relational database, where $j > i$, the method comprising:

determining a set A of data definition language (DDL) scripts that, when executed, perform creates, alters, and drops of DDL objects associated with version i of the relational database, resulting in DDL objects associated with version j of the relational database;

determining a set B of data manipulation language (DML) scripts that, when executed, create DML objects that are associated with version j of the relational database, but that are not associated with version i of the relational database;

determining a set C of DML scripts that, when executed, modify DML objects that are associated with both version i and version j of the relational database, but that differ between version i and version j of the relational database;

determining a set D of DML drop scripts that, when executed, drop DML objects that are associated with version i of the relational database, but that are not associated with version j of the relational database; and

generating an upgrade file comprising a union of sets A, B, C, and D ($A \cup B \cup C \cup D$).

[0057] The Examiner relies on Hotti as disclosing each of the "determining" elements of claim 13. With reference to determining sets A and B of claim 13, the Examiner cites Hotti column 2, lines 9-10 and column 4, lines 49-58, which are the same portions cited with reference to claim 1.

[0058] As described above with reference to claim 1, column 2, lines 9-10 gives a definition of "schema script", indicating that it is a script that creates a schema or creates a new revision of an existing schema of a database node. Column 4, lines 49-58 states that it is possible to update schemas of a database system as well as other information of a node, such as configuration scripts, configuration programs, and application binaries. Column 4, lines 49-58 also indicates that schema scripts can also include data manipulation language (DML) or data definition language (DDL) scripts.

[0059] While the cited portions of the reference may describe updating database schemas, the reference does not disclose determining specific sets of scripts. Specifically, Applicant fails to see how the cited portions of Hotti disclose, "determining a set A of data definition language (DDL) scripts that, when executed, perform creates, alters, and drops of DDL objects associated with version *i* of the relational database, resulting in DDL objects associated with version *j* of the relational database;" and "determining a set B of data manipulation language (DML) scripts that, when executed, create DML objects that are associated with version *j* of the relational database, but that are not associated with version *i* of the relational database," as recited in claim 13.

[0060] With reference to, "determining a set C of DML scripts that, when executed, modify DML objects that are associated with both version *i* and version *j* of the relational database, but that differ between version *i* and version *j* of the relational database," and with reference to, "determining a set D of DML drop scripts that, when executed, drop DML objects that are associated with version *i* of the relational database, but that are not associated with version *j* of the

relational database," the Examiner cites Hotti column 6, lines 30-37. This cited portion of the reference states that, "the configuration management replicas include scripts for creating and/or updating the schemas and/or application configuration databases". The cited portion of the reference makes no mention of determining a particular set of scripts that are used to modify DML objects that exist in two different versions of a relational database, but are each different between the two versions; nor does the cited portion of the reference make any mention of determining a particular set of scripts associated with one version of the relational database, but not with a later version of the relational database.

[0061] The Examiner indicates that Hotti does not disclose, "generating an upgrade file comprising a union of sets A, B, C, and D ($A \cup B \cup C \cup D$)."

(Office Action, page 22.) For this claim element, the Examiner relies on Baisley, column 2, lines 14-19. This cited portion of Baisley states, "The method comprises the steps of building a first list as a collection of versions that occur only in a history of the source version; and, building a second list as a collection of versions that occur only in a history of the target version. Next, a dual history is created as a union of the first and second lists."

[0062] It is important to note, however, that in column 2, lines 10-14, Baisley states, "These and other objects and advantages, which will become apparent as the invention is described in detail below, are provided by a computer-implemented method wherein a source version is to be merged into a target version of a model in an ***object oriented repository***." As is well known to those skilled in the art, an object oriented repository differs from a relational database. Claim 13 is clearly directed to a method related to a relational

database, not an object oriented database. Accordingly, Applicant respectfully submits that the combination of Hotti and Baisley is improper.

[0063] Furthermore, while the cited portion of Baisley may mention a union of two lists, the cited portion of Baisley does not disclose, "generating an upgrade file," as recited in claim 13. Rather, the cited portion of Baisley describes merging a source version of a model into a target version of a model in an object oriented repository. Applicant fails to see how Baisley's description of ***merging*** two versions of a model ***in an object oriented repository*** discloses, ***generating an upgrade file*** to upgrade version *i* of ***a relational database*** to version *j* of the relational database, where $j > i$, as recited in claim 13.

[0064] Accordingly, for at least the reasons given above, claim 13 is allowable over Hotti in view of Baisley, and Applicant respectfully requests that the 103 rejection of claim 13 be withdrawn.

Dependent Claims 14-19

[0065] Claims 14-19 ultimately depend upon independent claim 13. As discussed above, claim 13 is allowable. It is axiomatic that any dependent claim which depends from an allowable base claim is also allowable. Additionally, one or more of claims 14-19 may also be allowable for additional independent reasons.

Independent Claim 20

[0066] Claim 20 recites elements similar to those recited in claims 1 and 13. Accordingly, claim 20 is allowable over Hotti in view of Baisley for reasons similar to those stated above with reference to claims 1 and 13. Applicant respectfully requests that the 103 rejection of claim 20 be withdrawn.

Dependent Claims 30 and 31

[0067] These claims ultimately depend upon independent claim 29. As discussed above, claim 29 is allowable. It is axiomatic that any dependent claim which depends from an allowable base claim is also allowable. Additionally, some or all of these claims may also be allowable for additional independent reasons.

Based upon Hotti, Baisley, and Carey

[0068] The Examiner rejects claims 21 and 22 under 35 U.S.C. § 103(a) as being unpatentable over Hotti in view of Baisley and further in view of Carey. Applicant respectfully traverses the rejection of these claims and asks the Examiner to withdraw the rejection of these claims.

Dependent Claims 21 and 22

[0069] Claims 21 and 22 ultimately depend upon independent claim 20. As discussed above, claim 20 is allowable. It is axiomatic that any dependent claim which depends from an allowable base claim is also allowable. Additionally, claims 21 and/or 22 may also be allowable for additional independent reasons.

Conclusion

[0070] All pending claims are in condition for allowance. Applicant respectfully requests reconsideration and prompt issuance of the application. If any issues remain that prevent issuance of this application, the **Examiner is urged to contact me before issuing a subsequent Action.** Please call/email me or my assistant at your convenience.

Respectfully Submitted,

Dated: 8/30/07

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